

INTERNATIONAL SEARCH REPORT

Application No

PCT/NL2004/000474

| |
|---|
| A. CLASSIFICATION OF SUBJECT MATTER |
| IPC 7 C12N15/63 C12N15/31 C12N15/74 C12Q1/00 C12R1/23 |
| C12R1/46 A23C19/00 |

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|--|
| X | GUEDON ERIC ET AL: "Pleiotropic transcriptional repressor CodY senses the intracellular pool of branched-chain amino acids in Lactococcus lactis" MOLECULAR MICROBIOLOGY, vol. 40, no. 5, June 2001 (2001-06), pages 1227-1239, XP002267700 ISSN: 0950-382X cited in the application abstract | 1,2,37 |
| Y | page 1232, right-hand column, paragraph 1 - page 1236, left-hand column, paragraph 2; figure 2; tables 4,5 ----- -/- | 1,6,7, 12-17, 19,26, 27,32, 35-37,42 |

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the International filing date but later than the priority date claimed

- "T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the International search

2 February 2005

Date of mailing of the International search report

18/02/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel: (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Mateo Rosell, A.M.

INTERNATIONAL SEARCH REPORT

Application No

2004/000474

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|--|
| X | SERROR PASCALE ET AL: "CodY is required for nutritional repression of <i>Bacillus subtilis</i> genetic competence" JOURNAL OF BACTERIOLOGY, vol. 178, no. 20, 1996, pages 5910-5915, XP002267701 ISSN: 0021-9193 cited in the application abstract | 1,2,19 |
| Y | page 5911, right-hand column, paragraph 3 - page 5912, left-hand column, paragraph 2; figures 2,5,6 | 6,7,16, 17,19, 26,27, 32, 35-37,42 |
| X | SERROR PASCALE ET AL: "Interaction of CodY, a novel <i>Bacillus subtilis</i> DNA-binding protein, with the dpp promoter region" MOLECULAR MICROBIOLOGY, vol. 20, no. 4, 1996, pages 843-852, XP008026640 ISSN: 0950-382X cited in the application abstract | 19 |
| Y | page 844, left-hand column, paragraph 3 - page 845, right-hand column, line 1; figure 4 | 6,7,16, 17,19, 26,27, 32, 35-37,42 |
| X | BERGARA F ET AL: "CodY is a nutritional repressor of flagellar gene expression in <i>Bacillus subtilis</i> ." JOURNAL OF BACTERIOLOGY, vol. 185, no. 10, May 2003 (2003-05), pages 3118-3126, XP002267702 ISSN: 0021-9193 abstract | 19 |
| Y | page 3123, left-hand column, paragraph 3 - page 3126, right-hand column, paragraph 1; figures 5,6 | 6,7,16, 17,19, 26,27, 32, 35-37,42 |
| | ----- -/- | |

INTERNATIONAL SEARCH REPORT

Application No

NL2004/000474

| C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|---|---|-----------------------|
| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| Y | MARUGG JOEY D ET AL: "Identical transcriptional control of the divergently transcribed prtP and prtM genes that are required for proteinase production in <i>Lactococcus lactis</i> SK11" JOURNAL OF BACTERIOLOGY, vol. 178, no. 6, 1996, pages 1525-1531, XP002267703 ISSN: 0021-9193 cited in the application abstract page 1526, right-hand column, last paragraph - page 1529, right-hand column, last paragraph; figure 1 ---- | 19,26 |
| Y | RATNAYAKE-LECAMWASAM M ET AL: "BACILLUS SUBTILIS CODY REPRESSES EARLY-STATIONARY-PHASE GENES BY SENSING GTP LEVELS" GENES AND DEVELOPMENT, COLD SPRING HARBOR LABORATORY PRESS, NEW YORK, US, vol. 15, no. 9, 1 May 2001 (2001-05-01), pages 1093-1103, XP001184127 ISSN: 0890-9369 cited in the application the whole document ---- | 1,12-15, 19,37 |
| A | MOLLE VIRGINIE ET AL: "Additional targets of the <i>Bacillus subtilis</i> global regulator CodY identified by chromatin immunoprecipitation and genome-wide transcript analysis." JOURNAL OF BACTERIOLOGY, vol. 185, no. 6, March 2003 (2003-03), pages 1911-1922, XP002267704 ISSN: 0021-9193 cited in the application abstract page 1912, left-hand column, paragraph 1 page 1913, right-hand column, paragraphs 3,4; tables 2,3 ---- | 1,37 |
| A | WO 01/29183 A (AGRONOMIQUE INST NAT RECH ;ANBA MONDOLONI JAMILA (FR); DELORME CHR) 26 April 2001 (2001-04-26) page 3, lines 3-29 page 4, lines 7-25 page 5, line 4 - page 6, line 3 page 8, line 22 - page 9, line 27 page 17, line 30 - page 18, line 13 page 20, line 30 - page 21, line 33 ---- | 1,16,17, 36,43,44 |
| | | -/- |

INTERNATIONAL SEARCH REPORT

Application No

2004/000474

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| A | KONINGS WIL N ET AL: "Lactic acid bacteria: The bugs of the new millennium" CURRENT OPINION IN MICROBIOLOGY, vol. 3, no. 3, June 2000 (2000-06), pages 276-282, XP002315683 ISSN: 1369-5274 page 277, right-hand column, paragraph 3 - page 279, right-hand column, last paragraph ----- KUIPERS OSCAR P ET AL: "Current strategies for improving food bacteria" RESEARCH IN MICROBIOLOGY, vol. 151, no. 10, December 2000 (2000-12), pages 815-822, XP002315684 ISSN: 0923-2508 page 818, left-hand column, paragraph 2 - page 819, left-hand column, paragraph 1 ----- | 42-51 |
| A | | 42-51 |

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18 completely and 37-51 partially

A method for regulating the expression of a gene of interest in a host cell.

2. claims: 19-36 completely and 37-51 partially

An isolated or recombinant nucleic acid that comprises a CodY target sequence.

INTERNATIONAL SEARCH REPORT

application No.

PCT/NL2004/000474

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of Item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

- a sequence listing
 table(s) related to the sequence listing

b. format of material

- in written format
 in computer readable form

c. time of filing/furnishing

- contained in the international application as filed
 filed together with the international application in computer readable form
 furnished subsequently to this Authority for the purpose of search

2. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORTapplication No.
PCT/NL2004/000474**Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.